

R E M A R K S

The rejection of claims 60 and 62 under 35 USC 103(a) as being unpatentable over the combination of Han U.S. Patent No. 5,808,923 and Takahashi et al U.S. Patent No. 4,785,421 is respectfully traversed.

Claims 60 and 62 have been amended to make it clear that the audio signal processing method of the subject invention requires the level of the digital data stream to be shifted at every predetermined interval of time longer than the interval of the audio frame time. This results in extending the interval of level-shifting in consideration of the audio data. Consequently reproduction control is simplified by reducing the amount of operation and reducing the amount of data to be shifted in bit.

According to the present invention and as shown in Fig. 8, 2048 bytes of A-CONT pack which is shown in Fig. 6 contains 636 bytes of ACD (Audio Character Display information) (see page 33, line 22 to page 34, line 13 and page 35, lines 6-20). In addition, as shown in Fig. 9, the ACD contains 294 bytes of an area of audio reproduction control information (see page 35, line 21 to page 36, line 1). Furthermore, as shown in Fig. 21, the area of audio reproduction control information contains 3 bytes of level shift control data (see page 51, line 17 to page 52, line 4).

The A-CONT pack which includes the level shift control data is basically arranged at regular time intervals of the audio (frame) time of 0.5 second (see page 34, lines 3-13 and page 57, lines 20-24).

Accordingly, the level shift control data is generated at every predetermined interval of time longer than the regular intervals of an audio frame time of 0.5 second.

Moreover, as shown in Figs. 23A to 24, levels of PCM audio data are shifted in the interpolation processing circuit 47 (see page 56, lines 3-23). The level-shifted PCM audio data is transmitted to al level shifting unit 114a (see page 56, line 24 to page 57, line 6). In the level shifting unit 114a, the level shift control data is referred, and the shifted levels of the level-shifted PCM data are lowered by the level shift control data (see page 57, lines 7-24).

Accordingly, a level of the digital data stream is shifted at every predetermined interval of time by a predetermined amount of level decided by the level shift control data.

In addition thereto, as shown in Figs. 4 and 7, an audio pack (pack data stream) contains a sub header in a series of user data area (see pages 31, lines 3-13 and page 33, line 22 to page 35, line 5). Claims 60 and 62 as amended recite that the packed data stream comprises audio packs including user data area having a sub header and an audio area packing digital data of the level-shifted data streams.

Takahashi et al U.S. Patent No. 4,785,421 fails to disclose a level of a digital data stream which is shifted at every predetermined interval of time longer than the interval of an audio frame time and by a predetermined amount determined by a level-shift control data produced at every predetermined interval of time. This is a key feature of the subject invention and is not taught or suggested in Takahashi et al or Han et al. In addition, neither reference teaches a packed data stream which comprises audio packs including user data area having a sub header.

Han et al 923 refers to “normalization” and “denormalization” in column 1 line 17-46 by referring to “normalization” as “scaling” which is an arithmetic operation for expressing a signal level in the floating point.

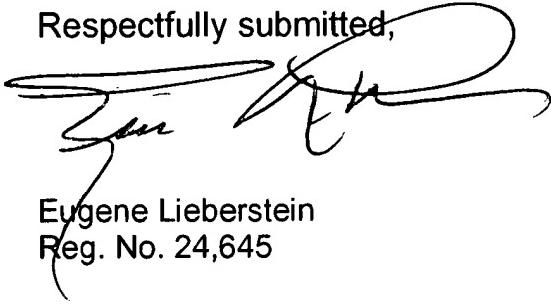
Consequently the "normalization" refers to in Han et al is completely different from a "bit shift" according to the present invention.

For all of the above reasons claims 60 and 62 as amended are clearly patentable over the references taken individually or in combination.

Applicant believes the amendment of claims 60 and 62 should overcome the rejection of record and should place the application in condition for allowance. However should the Examiner disagree or believe a new search is necessary as a result of the amended claims applicant is also filing herewith a request for continued examination "RCE" so that the amended claims be entered to facilitate further prosecution.

Reconsideration and allowance of claims 60-62 is respectfully solicited.

Respectfully submitted,



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12 Oct '01

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